AMENDMENTS TO THE CLAIMS

This listing of claims includes a complete listing of both allowed claims and amended claims and will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) A system for storing information locally that is received from an information delivery system for viewing at a local system, comprising;

a database system that logs selections of previously viewed information at a local system received from an information delivery system;

an inference system trained by the log selections of previously viewed information and that assigns values to selections in a recommendation list based on the previously viewed information, the inference system employs collaborative filtering techniques on a temporal history of the previously viewed information to assign values to selections in the recommendation list from a higher probability to a lower probability that a user of the system would prefer to view information corresponding to an available selection; and

a local storage system that stores selection information corresponding to the assigned values of the selections.

2. (Cancelled)

3. (Original) The system of claim 1, the previously viewed information is time stamped by event type and the inference system is based on a single collaborative filtering model being trained according to time intervals that has been viewed.

4. (Original) The system of claim 1, the inference system being based on a single collaborative filtering model being trained according to time intervals that has been viewed.

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5. (Original) The system of claim 1, the viewed information is time stamped by event occurrence and the inference system is based on a single collaborative filtering model trained according to time intervals that the information has been viewed.

6. (Original) The system of claim 1, the inference system receives further attributes of other systems and utilizes these attributes during training of the inference system.

7. (Original) The system of claim 1, the inference system receives attributes of other systems and utilizes these attributes during training of the inference system.

8. (Original) The system of claim 1, the local storage system assigns sorting values to the selections based on a set of the selection.

9. (Original) The system of claim 1, the local storage system dynamically adjusts the value of the selections based on a set of cache retention policies.

10. (Original) The system of claim 9, the local storage system receives new selections with assigned values and dynamically adjusts location of the stored information and new information based on the new selections in the local storage system, wherein information is aged out of the local storage system based on an expected value density of each selection.

11. (Original) The system of claim 10, wherein aged out information is reduced in size and quality by compressing the information and stored on the local storage system based on the likelihood that the user will view the information prior to removing the information from the local storage system.

12. (Original) The system of claim 10, the expected value density of a selection is determined based on the assigned value of the selection divided by the size of the selection.

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13. (Original) The system of claim 12, wherein selections are grouped by class types with different cache retention policies for aging the assigned values of selections within different class types.

14. (Currently Amended) A multimedia system that stores information locally received from a program delivery system for viewing at a local system, comprising;

a cache loading system that receives a list of selections from a program delivery system and stores program selection information corresponding to the list of selections in a local memory system;

a local storage system that receives new selections with assigned values; and

a utility system that monitors program selection information in the local memory system and communicates value information to the cache loading system for removing information residing in the local memory system in exchange for information having a higher value received by the program delivery system, the utility system dynamically adjusts the location of the stored information and new information based on the new selections in the local storage system, wherein information is aged out of the local storage system based on an expected value density of each selection.

15. (Original) The system of claim 14, the program selection information being television content.

16. (Original) The system of claim 15, the local memory system comprising a first portion to define user defined selections to be stored, a second portion to define live show selection to be stored and a third portion to define general selections to be stored.

17. (Cancelled)

18. (Currently Amended) The system of claim 14 17, the expected value density of a selection is determined based on the assigned value of the selection divided by the size of the selection.

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19. (Original) The system of claim 14, the utility system dynamically adjusts the assigned values based on a cache retention policy.

20. (Original) The system of claim 14, wherein selections are grouped by class types with different cache retention policies for aging the assigned values of selections within different class types.

21. (Original) The system of claim 20, wherein the cache retention policies of each class type is initially defined based on a default time-dependent decay function, the time-dependent decay function being continuously refined based on the likelihood that a user will view a program based on the amount of time that has passed since the program has been recorded and not yet viewed.

22. (Original) The system of claim 14, the utility system comprising a time dependent utility model that dynamically adjusts the assigned values based on the time that the selection resides in the local memory system.

23. (Original) The system of claim 14, further comprising an inference system adapted to receive a reviewed program list from the program delivery system, provide a recommendation list and dynamically assign values to selections in the recommendation list based on previously viewed programs, wherein the cache loading system stores the program selection information corresponding to the assigned values of the selections in the local storage system.

24. (Original) The system of claim 23, the inference system employing collaborative filtering techniques on a temporal history of previously viewed programs and the selectable program list to dynamically assign values to selections in a recommended program list from a higher probability to a lower probability that a user of the system would prefer to view information corresponding to an available selection.

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25. (Original) The system of claim 24, the viewed programs being time stamped by event type and the inference system being based on a single collaborative filtering model adapted to be trained according to time intervals that the information has been viewed.

26. (Original) The system of claim 24, the inference system being based on a plurality of separate collaborative filtering models, each collaborative filtering model being trained with the information from a particular time interval of temporal history that has been viewed.

27. (Original) The system of claim 24, the viewed programs being time stamped by event occurrence and the inference system being based on a single collaborative filtering model adapted to be trained according to time intervals that the information has been viewed.

28. (Original) The system of claim 24, the inference system being further adapted to receive further attributes of at least one user of the system and utilize these attributes in assigning values to selections in the selectable program list.

29. (Original) The system of claim 14, the cache loading system being further adapted to record live shows at any given time period for N number of shows employing N number of tuners, wherein the shows are selected based on the temporal history of previously viewed programs within a time interval covering the any given time period.

30. (Original) The system of claim 14, the multimedia system residing on a television set top box.

31. (Original) The system of claim 14, the information system residing on a remote server communicatively coupled to at least one set top box, wherein a recommendation list and information corresponding to programs in the recommendation list are generated by the server and transmitted to the set top box.

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32. (Currently Amended) A multimedia system adapted to store locally information received from a program delivery system for viewing at a local system, comprising:

    a local system having a memory loading system operable to determine a portion of a multimedia program, downloadable from a remote source to the local system, to store locally based on a local viewing rate and a remote transmission rate of the multimedia program;

    a storage system adapted to store a portion of the multimedia program necessary for uninterrupted viewing of the multimedia program;

    an inference system employing collaborative filtering techniques on a temporal history of previously viewed programs and a selectable downloadable program list to dynamically assign values to selections in the selectable program list from a higher probability to a lower probability that a user of the system would prefer to view information corresponding to available selections; and

    a viewing system operable to retrieve the multimedia program from the storage system for viewing, wherein a remaining portion of the multimedia program is downloaded to the storage system while the multimedia program is being viewed until the entire multimedia program has been downloaded.

33. (Original) The system of claim 32, the storage information being adapted to store portions of a plurality of downloadable selections based on a probability that a system user would like to view a selection.

34. (Currently Amended) The system of claim 32, further comprising an the inference system adapted to determine the portions of downloadable selections to store in the storage system based on the temporal history of previously viewed programs of the system.

35. (Cancelled)

36. (Currently Amended) The system of claim 32 35, further comprising a utility system operable to monitor program selection information in the storage system and

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communicate aging information to the memory loading system for aging out older program information residing in the storage system in exchange for newer information.

37. (Currently Amended) A method for determining user preferred content to be stored in a local storage system having definite limits, the user preferred content being received from an information delivery system for viewing at a local system, comprising:

receiving a list of available selections;

assigning a value to each of the available selections comprising employing collaborative filtering techniques on a temporal history of previously viewed information and the list of available selections to determine a higher probability to a lower probability that a system user would prefer to view information corresponding to an available selection;

storing information relating to a corresponding selection in the local storage system for the available selections based on value of the selection until the limits of the local storage system is obtained;

dynamically adjusting the values of the available selections based on at least one cache retention policy; and

removing information from the storage medium as its value causes it to fall outside the limits of the storage medium.

38. (Cancelled)

39. (Currently Amended) The method of claim 37 38, the step of assigning values to available selections further comprising considering attributes of at least one system user and utilizing these attributes in assigning values to selections in the available selection list.

40. (Currently Amended) The method of claim 37 38, the step of assigning values to available selections further comprising considering attributes of other systems and utilizing these attributes in providing global values to a list of available selections to a cluster of systems based on the temporal viewing history of the systems of the cluster.

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41. (Original) The method of claim 37, further comprising a step of determining an expected value density of each selection by dividing the value of the selection by the size of the selection for each selection stored in the local storage system.

42. (Original) The method of claim 37, the at least one cache retention policy being a value aging rule set such that the assigned values are dynamically adjusted based on the time that the selection resides in the local storage system.

43. (Original) The method of claim 42, further comprising receiving new selections with assigned values and dynamically adjusting the location of the stored information and new information in the local storage system wherein information is aged out of the local storage system having lower values that falls outside the limits of the local storage system.

44. (Original) The method of claim 42, the at least one cache retention policy comprising a plurality of cache retention policies grouped by class types with different cache retention policies for aging the assigned values of selections within different class types.

45. (Original) The method of claim 37, the local storage system comprising a first portion for storing user defined selections to be stored, a second portion for defining live show selection to be stored and a third portion for defining general selections to be stored.

46. (Original) The method of claim 45, further comprising recording programs that are currently in progress at a given time period for selective viewing of at least one of the programs from a beginning of a program in the second portion.

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47. (Currently Amended) A system for determining user preferred content to be stored in a local storage system having definite limits, the user preferred content being received from an information delivery system for viewing at a local system, comprising;

means for receiving a list of available selections;

means for assigning a value to each of the available selections <u>adapted to employ collaborative filtering techniques on a temporal history of previously viewed information and the list of available selections to determine a higher probability to a lower probability that a system user would prefer to view information corresponding to an available selection</u>;

means for storing information relating to a corresponding selection in the local storage system for the available selections based on the assigned value until the limits of the local storage system is obtained;

means for dynamically adjusting the values of the available selections based on a utility of the selection; and

means for removing information from the storage medium as its value causes it to fall outside the limits of the storage medium.

48. (Cancelled)

49. (Original) The system of claim 47, further comprising means for determining an expected density value of selections by dividing the value of the selection by the size of the selection for each selection stored in the local storage system.

50. (Original) The system of claim 47, the utility of the selection being based on the time that the selection resides in the local storage system.

51. (Original) The system of claim 47, the available selections being television programs and the local system being a television.

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52. (Original) The system of claim 51, further comprising means for recording television programs that are currently in progress at a given time period for selective viewing of at least one of the programs from a beginning point.

53. (Currently Amended) A multimedia system adapted to store television content locally that is received from a program delivery system for viewing at a local system, comprising;

      a cache loading system operable to receive a list of live show selections from a program delivery system and store the live show selections corresponding to the list of selections in a local memory system based on assigned values; and

      a utility system operable to monitor program selection information in the local memory system and communicate value information to the cache loading system wherein high values are assigned to live show selections currently in progress, which are quickly decayed after the show is no longer live wherein live shows residing in the local memory having lower values are aged out in exchange for live shows having a higher value received by the program delivery system, the utility system dynamically adjusts the location of the stored live show selections and the new live show selections in the cache loading system based on an expected value density of each selection.

54. (Original) The system of claim 53, the cache loading system being further adapted to record live shows at any given time period for N number of shows employing N number of tuners, wherein the shows are selected based on the temporal history of previously viewed programs within a time interval.

55. (Original) The system of claim 53, the cache loading system being further adapted to record other shows that are not live with the live shows wherein the live shows are provided with higher initial values than the other shows and aged out quicker when no longer live than the other shows.

56. (Original) The system of claim 53, wherein live show selections beginning at starting standard times, starting at one of the hour and half hour, are provided with higher initial

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values than the other shows and aged out quicker when no longer live than the other shows, wherein the higher initial values are determined based on the likelihood that the show will be viewed by a user of the system.

57. (Currently Amended) A system that facilitates local storage space utilization, comprising:

  a component that logs information relating to historical access of items; and

  an inference component that employs the log information in application of a utility-based analysis in connection with selectively storing to and/or deleting items from a local storage space, the inference component utilizes collaborative filtering techniques on the historical access of items to assign values to selectively store to and/or delete items from the local storage space based on a higher probability to a lower probability that a user of the system would prefer to access items corresponding to an available selection .

58. (Original) The system of claim 57, the inference component dynamically computes changing value densities across a subset of the items to at least one of: repack, recompress, and replace old items with new items.

59. (Original) The system of claim 57, the utility analysis comprising computing a likelihood that an item will be accessed given certain evidence.

60. (Original) The system of claim 59, the utility analysis considers decay rates per respective volatility of content relating to the subset of items.

61. (Original) The system of claim 57, the items comprise media.

62. (Original) The system of claim 57, the items comprise electronic documents.

63. (Original) The system of claim 57, the utility analysis comprising employment of parametric functions to assess value of a respective item.

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64. (Original) The system of claim 57, further comprising a model of the probability an item will be accessed.

65. (Original) The system of claim 64, the model is a statistical model.

66. (Original) A system that facilitates memory utilization, comprising:

     means for storing logging information relating to historical access of items; and

     means for appointing respective values to a subset of the items based on access thereof; and

     means for <u>inferring respective values to a subset of the items based on collaborative filtering techniques of the historical access of items</u> and applying the values in a value density-based utility analysis in connection with at least one of: replacement, retention, and compression of the subset of items to a memory.

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